

Chief, Engineering Staff, OC

26 JUN 1967

Chief, Real Estate and Construction Division, OL

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Proposed Changes on Air Conditioning System for Receiver Building,  
[REDACTED]

Attached hereto are comments and drawings by this Division on the  
proposed changes on the subject project. Please submit the attached data  
to [REDACTED] through your channels.

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cc: Attachments to PE Engineer,  
[REDACTED]

Distribution:

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OL/RECD [REDACTED] 017 (23 June 1967)

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COMMENTS AND PROPOSED CHANGES ON

RECEIVER BUILDING

1. The air conditioning drawings have been reviewed for equipment layout with respect to reliability and security. The attached diagrammatic drawing showing recommended equipment layout changes and the comments which should be considered in the design are as follows:

a. To avoid complete relocation of driveway, the mechanical equipment room should be located south of Room D. Moreover, air handling units separated from chillers, pumps and switchgear offer a security advantage by minimizing time spent in the air handling unit housing by indigenous personnel.

b. For Room D, as previously requested, it is imperative that two air handling units be used instead of one large one; moreover, two AHU at reduced capacity require less space thus minimizing the relocation of the driveway as shown on the present plan. With the new proposed plan AHU #4 should be sized for the present equipment load of 194,000 BTU or 269,000 BTU total including room load and others. Based on this concept, AHU #4 could be sized for 23<sup>to</sup> 25 tons capacity or 8,000 to 10,000 CFM

approximately. The second AHU, unit #5, to supplement AHU #4 when the emergency electronic equipment load, 10,440 watts or 18,500 watts, is operating and/or turned on when AHU #4 fails. AHU #5 capacity can be equal to AHU #4 or at a slightly reduced capacity.

c. The booster blower installed in duct and eliminating AHU #3 is not acceptable. The new AHU #3 should be selected for the required static pressure. Room E sensible heat load of 143,745 BTU indicated in calculation sheet seems to be incorrect or the occupants provided the designer with erroneous load.

d. Two chillers, 60 to 65 tons each, instead of two 100 ton chillers with provision for installation of a third at a later date, is approved. Chillers with single or two opened type compressor driven by one motor will not be acceptable. Interpretation of the specifications does not eliminate this possibility. If chillers with two 30 ton opened type compressors each are selected for this application, then one of the four compressors would normally be on standby only. However, if chillers with three 20 or 25 ton hermetic type compressor each are selected, then one or two compressors of the six would be on standby.

e. The air distribution and quantity from AHU #1 as standby for AHU #2 duct system by means of the interconnecting duct is not too clear. If AHU #1 is to have a capacity of 10,800 CFM as indicated on Drawing No. 1156 35, sheet 13, and of which 3100 CFM will be for the office area, we are unable to determine where the remainder of air will be used other than Room A. The air quantity and procedure of

#1 and 2 should be submitted for approval.

f. For chilled water reliability to the heat exchangers in Room E the chilled water control should have a pressure switch to automatically start a standby chilled water pump.

2. Because of the major changes, redesigning and new layout will be required. With this view in mind, the drawings and specifications were not reviewed completely. The Mechanical Design analysis (calculation data) were checked briefly, and they were exceptionally well done. Agreed under the existing circumstances, there can be no perfect system in all respects; however, the above comments and, as shown on the drawing, would provide greater reliability which is a primary concern.